

WHAT IS CLAIMED IS

1. A method for scanning a document comprising a plurality of pages, comprising:

scanning a first page in the document at a first scanning speed, the first scanning speed being one of a color speed and a monochromatic speed;

determining if the first page is color or monochrome based on a result of the scan of the first page; and

rescanning the first page at a second scanning speed, the second scanning speed being the other of a color speed and a monochromatic speed, if the first speed is the monochromatic speed and the first page is determined to be color, or if the first speed is the color speed and the first page is determined to be monochrome.

2. A method according to claim 1, further comprising:

scanning a second page in the document at the first scanning speed;

determining if the second page is color or monochrome based on a result of the scan of the second page; and

rescanning the second page at the second scanning speed if the first speed is the monochromatic speed and the second page is determined to be color, or if the first speed is the color speed and the second page is determined to be monochrome.

3. The method according to claim 2, wherein the first scanning speed is the monochromatic speed and the second scanning speed is the color speed.

4. A method according to claim 1, further comprising
scanning a second page in the document at the first scanning speed if
the first page is not rescanned; and
scanning the second page at the second scanning speed if the first page
is rescanned.

5. A method according to claim 4, further comprising:
determining if the second page is color or monochrome based on a result
of the scan of the second page; and
rescanning the second page if the scanning speed for the second page is
the monochromatic speed and the second page is determined to be color, or if
the scanning speed for the second page is the color speed and the second page
is determined to be monochrome.

6. A method according to claim 4, further comprising:
for each subsequent page of the document, scanning that subsequent
page at the same scanning speed as the last scanning speed of the preceding
page of the document.

7. A method according to claim 1, further comprising:
initially scanning each subsequent page of the document at the first
scanning speed if the first page is not rescanned; and
initially scanning each subsequent page of the document at the second
scanning speed if the first page is rescanned.

8. A method according to claim 7, wherein, for each subsequent
page, that subsequent page is rescanned if the initial scanning speed for that
subsequent page is the monochromatic speed and that subsequent page is

determined to be color or if the initial scanning speed for that subsequent page is the color speed and that subsequent page is determined to be monochrome.

9. A method according to claim 1, further comprising maintaining a count of the number of scanned pages that are color and the number of scanned pages that are monochrome, and at each subsequent page of the document to be scanned, initially scanning that subsequent page at the monochrome scanning speed or the color scanning speed when the majority of the scanned pages are monochrome or color, respectively.

10. A method according to claim 1, wherein the monochromatic speed is faster than the color speed.

11. A method according to claim 1, further comprising:
detecting the scanned first page with a 4-line CCD sensor; and
generating a read signal from the detection of the scanned first page.

12. A method for scanning a document comprising a plurality of pages, comprising:

scanning a first page in the document at a one of a color speed and a monochromatic speed;

detecting the scanned first page with a 4-line CCD sensor having a monochromatic sensor, a red sensor, a green sensor and a blue sensor; and
generating read signals from each of the sensors of the 4-line CCD sensor;

determining if the first page is color or monochrome based on a result of the scanning;

accepting only the read signal of the monochromatic sensor if the first page is determined to be monochrome; and

accepting only the read signals of two or more of the red sensor, the green sensor and the blue sensor if the first page is determined to be color.

13. A method according to claim 12, wherein a resolution of image data output from the monochromatic sensor is higher than a resolution of image data output from the red sensor, the green sensor and the blue sensor.

14. A system for scanning a document comprising a plurality of pages, the system comprising:

- a light source that scans light a first page in the document at a first scanning speed, the first scanning speed being one of a color speed and a monochromatic speed;

- one or more mirrors that reflect the light scanned on the first page;

- a sensor that detects the light reflected by the one or more mirrors and generates image data of the first page from the detected light; and

- a detection circuit configured to determine if the first page is color or monochrome based on the image data of the first page,

- wherein the light source rescans the first page at a second scanning speed, the second scanning speed being the other of a color speed and a monochromatic speed, if the first speed is the monochromatic speed and the first page is determined to be color by the detection circuit, or if the first speed is the color speed and the first page is determined to be monochrome by the detection circuit.

15. A system according to claim 14, wherein the light source scans a second page in the document at the first scanning speed, the detection circuit being further configured to determine if the second page is color or monochrome based on a result of the scan of the second page, and

wherein the light source rescans the second page at the second scanning speed if the first speed is the monochromatic speed and the second page is determined to be color by the detection circuit, or if the first speed is the color speed and the second page is determined to be monochrome by the detection circuit.

16. The system according to claim 15, wherein the first scanning speed is the monochromatic speed and the second scanning speed is the color speed.

17. A system according to claim 14, wherein the light source scans a second page in the document at the first scanning speed if the first page is not rescanned, and scans the second page at the second scanning speed if the first page is rescanned.

18. A system according to claim 17, wherein the detection circuit is further configured to determine if the second page is color or monochrome based on a result of the scan of the second page, and

wherein the light source rescans the second page if the scanning speed for the second page is the monochromatic speed and the second page is determined to be color by the detection circuit, or if the scanning speed for the second page is the color speed and the second page is determined to be monochrome by the detection circuit.

19. A system according to claim 17, wherein, for each subsequent page of the document, the light source scans that subsequent page at the same scanning speed as the last scanning speed of the preceding page of the document.

20. A system for scanning a document comprising a plurality of pages, the system comprising:

- a light source that scans light a first page in the document at a first scanning speed, the first scanning speed being one of a color speed and a monochromatic speed;

- one or more mirrors that reflect the light scanned on the first page;

- a 4-line CCD sensor having a monochromatic sensor, a red sensor, a green sensor, and a blue sensor, which detect the light reflected by the one or more mirrors and generate monochromatic data, red data, green data, and blue data, respectively, of the first page from the detected light; and

- a detection circuit configured to determine if the first page is color or monochrome based on the monochromatic data, red data, green data, and blue data of the first page,

- wherein only the monochromatic data from the monochromatic sensor is accepted if the detection circuit determines the first page to monochrome, and only at least two of the red data, green data, and blue data are accepted if the detection circuit determines the first page to be color.